APPENDIX 3-5-1

SUMMARY OF POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANT SPECIES FOR THE GDBR FIELD DEVELOPMENT

Species	Status	Habitat	Potential for and/or Occurrence within GDBR[1]
Arabis vivariensis park rock cress	Sensitive	Webber Formation sandstone and limestone outcrops in mixed desert shrub and pinyon-juniper communities. 5000-6000ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Astragalus equisolensis horseshoe milkvetch	Candidate	Duchesne River Formation soils in sagebrush, shadscale, horsebrush and mixed desert shrub communities.4790-5185ft.	Plants occur within the proposed field development. Additional habitat is possible.
Astragalus hamiltonii Hamilton milkvetch	Sensitive	Lapoint and Dry Gulch members of the Duchesne River Formation , Mowery shale, Dakota and Wasatch Formation soils in pinyon-juniper and desert shrub communities. 5240-5800ft	None – Brennan Member of Duchesne River formation. No suitable habitat. Landforms and associated soils do not occur in analysis area..
Cirsium ownbeyi Ownbey thistle	Sensitive	East flank Uinta Mountains. In mesic sites within canyons of mixed sagebrush, juniper and riparian communities. 5500-6200ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Hymenoxys lapidicola Rock hymenoxis	Sensitive	Sandy soils on ledges and soil filled crevices in the Weber Formation associated with Blue Mountain. (5700-8100 feet).	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Penstemon acaulis stemless penstemon	Sensitive	Daggett County. Semi-barren substrates in pinyon-juniper and sagebrush-grass communities. 5840-7285 ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Penstemon flowersii Flowers penstemon	Sensitive	Clay badlands from Myton to Roosevelt and Randlett, in shadscale and desert communities. 5000-5400ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Penstemon gibbensii Gibbens penstemon	Sensitive	Brown's Park in Daggett County. Sandy and shaley (Green River Shale) bluffs and slopes with juniper, thistle, Eriogonum, Elymus, serviceberry, rabbit brush & Thermopsis 5500-6400 ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Penstemon goodrichii Goodrich penstemon	Sensitive	Lapoint-Tridell-Whiterocks area. Duchesne River Formation on blue gray to reddish bands of clay badlands. Elevations 5590 to 6215 ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Penstemon grahamii Graham beardtongue	Candidate	East Duchesne and Uintah Counties. Evacuation Creek and Lower Parachute Member of the Green River Formation. Shaley knolls in sparsely vegetated desert shrub and pinyon-juniper communities.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.

Species	Status	Habitat	Potential for and/or Occurrence within GDBR[1]
		4600-6700 ft	
Penstemon scariosus var. *albifluvis* White River penstemon	Candidate	Evacuation Creek and Lower Parachute Creek Member of the Green River Formation on sparsely vegetated shale slopes in mixed desert shrub and pinyon-juniper communities. 5000-6000ft	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Schoencrambe argillacea Clay thelopody	Threatened	Bookcliffs On the contact zone between the upper Uinta and lower Green River shale formations in mixed desert shrub of Indian ricegrass and pygmy sagebrush.5000-5650 ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Schoencrambe suffrutescens Shrubby reed-mustard	Endangered	Evacuation Creek and lower Parachute Creek Members of the Green River Formation on calcareous shales in pygmy sagebrush, mountain mahogany, juniper and mixed desert shrub communities. 5400-6000ft.	None - No suitable habitat. Formations and associated soils do not occur in the analysis area.
Sclerocactus glaucus (*Sclerocactus brevispinus*) Uinta Basin hookless cactus	Threatened	Gravelly hills and terraces on Quaternary and tertiary alluvium soils in cold desert shrub communities. 4700-6000ft.	Potential habitat within the Uintah Geological formation.
Spiranthes diluvialis Ute lady's tresses	Threatened	Streams, bogs and open seepages in cottonwood, salt cedar, willow and pinyon-juniper communities on the south and east slope of the Uintah Range and it's tributaries, and the Green River from Browns Park to Split mountain. Potentially in the Upper reaches of streams in the Book Cliffs. 4400-6810ft.	None - No suitable habitat. Green River corridor has been surveyed for potential habitat within the project area. None was found due to vegetation, texture, lack of consistent water table, and soils. Drainages into the Green River do not have suitable habitat due to high alkalinity and salinity.

APPENDIX 3.5.2

USFWS T&E Species

FWS 2004

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

In Reply Refer To
FWS/R6
ES/UT
04-0426

February 3, 2004

Memorandum

To: Field Manager, Vernal Field Office, Bureau of Land Management, Vernal, Utah

From: Utah Field Supervisor, Ecological Services, U.S. Fish and Wildlife Service, Salt Lake City, Utah

Subject: 1792 UT-080; Questar Exploration and Production Company's Greater Deadman Bench Environmental Impact Statement, Scoping Notice

The U.S. Fish and Wildlife Service (Service) has reviewed your letter of January 8, 2004 announcing your intent to prepare an environmental document on the Questar Exploration and Production (QEP) Company's Greater Deadman Bench oil and gas production region project in Uintah County, Utah. The purpose of the project is to drill up to 1,239 new wells over a 10-year period, or until the resource base is fully developed on the leases. QEP estimates over 9 million barrels of oil and 750 billion cubic feet of natural gas will be produced over the next 40 years. The project area involves 99,000 acres in the Greater Deadman Bench oil and gas production region, located about 20 miles south of Vernal, Utah.

Of the proposed 1,239 wells, 769 well pads would be drilled on new locations and 470 would be "twins" drilled from existing locations. The proposed wells would be drilled on a 40-acre spacing pattern. Well site construction would consist of the following surface disturbance activities:

- Leveling a rectangular pad to 300' x 350', approx 2.5 acres
- Reserve pit for drilling mud and water storage of 150' x 70' x 12' deep adjacent to pad, approx 0.24 surface acres
- Stockpiles for topsoil and subsoil adjacent to pad, approx 0.5 acres
- Access road connecting the pad to the nearest established road of 1,000' x 30', approx 0.5 acres
- Right-of-Way for Green River Formation in the Green River Formation for production flow lines or water injection lines of 1,000' x 30', approx 0.5 acres
- Right-of-Way for Wasatch, Mesaverde, Blackhawk/Mancos, and Frontier/Dakota Formation gas wells for surface gathering lines of 1,000' x 30', approx 0.5 acres

[illegible]stent with NEPA regulation 40 CFR § 1503.1(a)(1) that the action agency shall obtain the [illegible]ments of any Federal agency which has jurisdiction by law or special expertise with respect [illegible]ny environmental impact involved, we are responding to your request for concerns and [illegible]omments on this EIS. In Section 1 of this letter we convey our concerns that should be [illegible]ddressed in the EIS for this project. Section 2 of this letter addresses your responsibilities under section 7 of the Endangered Species Act (ESA) of 1973, 16 U.S.C. § 1536.

Section 1.

The project area includes portions of the Upper Green River, which supports four federally endangered Colorado River fishes: Colorado pikeminnnow, humpback chub, bonytail, and razorback sucker. Sensitive species found within this river include roundtail chub, flannelmouth sucker, and bluehead sucker. The project area contains designated critical habitat for the endangered Colorado River fishes including those portions of the 100-year floodplain that contain constituent elements. The constituent elements are those physical and biological features that the Service considers essential for the conservation of the species and include, but are not limited to, the following items: (1) Space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally (5) habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of the species. Project activities should not lead to the detriment of this critical habitat.

White-tailed prairie dog colonies and habitat exist within this project area. White-tailed prairie dogs have been petitioned for listing under the Endangered Species Act. They are also included on the Utah Division of Wildlife Resources Sensitive Species List. The EIS should describe impacts to the species and habitat. Modifications of project activities should be designed and implemented as necessary to protect the white-tailed prairie dog and/or habitat from surface disturbing activities. A Range-wide Conservation Assessment is being developed, and could result in specific conservation recommendation for the species that may be applicable to this project.

Black-footed ferret habitat exists within the project area (personal communication, Miles Hanberg UDWR, January 28, 2004). We recommend implementing the *Surface Disturbance Management Guidelines* in Appendix E of the *Cooperative Plan for the Reintroduction and Management of Black-Footed Ferrets* (UDWR 1996). Planned resource extraction should be designed to avoid adverse impacts on prairie dog and black-footed ferret habitat. In the event of adverse impacts, activities should be designed to influence the smallest area feasible (UDWR 1996) and compensatory mitigation should be required. Buffers around existing colonies of 500 meters should be implemented to alleviate potential disturbances (personal communication, Amy Seglund, UDWR 2003). In addition, implementation of a long-term monitoring program to evaluate effects of development on prairie dogs and ferrets should be instituted. Evaluation of prairie dog populations before and after resource projects is recommended. Monitoring of populations should incorporate the methodology developed by Biggins et al. 1993.

The project area contains important wintering and brooding habitat for Greater sage grouse. There are two active sage grouse leks in the project area (personal communication, Miles Hanberg, UDWR, January 28, 2004). Any surface occupancy within historical or presently

occupied habitat should be avoided; grouse may utilize different lek sites due to weather variations or population increases. Development near strutting grounds or leks should be avoided as they are considered the focal point of year-around activities for sage grouse populations (Braun et al. 1977). The EIS should discuss the direct and indirect impacts to sage grouse leks; habitat surrounding the breeding grounds; nesting; and brood-rearing areas. Fragmentation is identified as one of the factors contributing to sage-grouse population declines (Braun 1998). To minimize the impacts of resource developments in sage-grouse habitats, we recommend avoiding developments that may fragment contiguous sage-grouse habitat or connectivity between seasonal habitats (breeding, nesting, early or late brood-rearing habitats). Areas that dually provide lekking/nesting habitats and wintering habitats should not be considered for natural resource development because these areas provide yearlong grouse use. If breeding, nesting, brood-rearing, and/or wintering habitats are unknown, monitoring to identify these habitats is essential, prior to resource development. Guidelines to minimize impacts to sage grouse, including seasonal and spatial buffers and habitat restoration recommendations, can be found in: the Utah Division of Wildlife Resources' *Strategic Plan for Management of Sage Grouse, 2002*, Publication No. 02-20 and in *Guidelines to Manage Sage Grouse Populations and Their Habitats* (Connelly et al. 2000).

Activities should avoid, to the extent possible, sensitive wildlife periods and areas (breeding season, calving season, migration corridors). Impacts to migratory bird habitat should be evaluated and minimized, focusing on the sagebrush obligate and sagebrush associated species on the Service's 2002 List of Birds of Conservation Concern and the Partners in Flight Priority Bird Species. To help meet responsibilities under Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), we recommend you conduct activities outside critical breeding seasons for migratory birds, minimize temporary and long-term habitat losses, and fully mitigate unavoidable habitat losses. If habitat disturbances occur in the spring or summer, we recommend surveys for migratory birds to assist in efforts to comply with the Migratory Bird Treaty Act (16 U.S.C. 703-712) and E.O. 13186.

Ferruginous hawks are known to occur in the Greater Deadman Bench Study Area. We recommend use of the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (Romin and Muck, 2002) which were developed in part to provide consistent application of raptor protection measures statewide and provide full compliance with environmental laws regarding raptor protection. Raptor surveys and mitigation measures are provided in the Raptor Guidelines as recommendations to ensure that proposed projects will avoid adverse impacts to raptors. Locations of existing raptor nests should be identified prior to the initiation of project activities. Direct loss of nesting sites or territories should be avoided. Appropriate spatial buffer zones of inactivity should be established during crucial breeding and nesting periods relative to raptor nest sites or territories. Arrival at nesting sites can occur as early as December for certain raptor species. Nesting and fledging continues through August. Generally we recommend spatial buffers of 1.0 mile for threatened or endangered raptors, 0.5 mile for other diurnal raptors, and 0.25 mile for nocturnal raptor nests.

The 1997 Mexican spotted owl model identifies habitat within the project area. Although the 2000 model suggests nesting habitat may not exist within the project area, field reviews should be conducted to ensure model accuracy (letter from our office to BLM State Director, November 21, 2002). Small-scale habitat features, such as crevices or alcoves that may provide suitable owl

microclimates may be missed by the 2000 model. In addition, the 2000 model does not necessarily identify all owl habitat, such as foraging, dispersal, and wintering habitats. The EIS should discuss potential impacts and measures to minimize effects to the Mexican spotted owl.

Horseshoe Milkvetch occurs directly north of the study area and the Uinta Basin hookless cactus occurs in the project area (personal communication, Lenora Sullivan, UNHP, January 30, 2004). Impacts to these species should be minimized and the EIS should describe measures to protect these species.

The proposal may increase access and disturbance to previously isolated areas with high wildlife value. Therefore, the potential effects of dispersed recreation or enhanced access (camping, hiking, off-road vehicles) on wildlife habitat (disturbance of migration corridors, loss of vegetation) should be considered in project plans. Measures should be taken to prevent increased access to sensitive wildlife areas. In addition, the project activities will lead towards fragmenting the landscape and habitat. The EIS should discuss these impacts and well as describe the measures that will be taken to limit them.

The EIS should also identify the amount, location, and timeframe of temporary disturbance that could result from the proposed action. Displacement of wildlife across a large area during critical times, such as breeding, could prove a significant impact. If wildlife are displaced, it is likely that the area to which they are displaced is inhabited by other wildlife or disturbed by other ongoing activities. Depending on the season and species, displacement could lead to nest abandonment, inter- and intra-specific competition, reproductive failure, and possible mortality. In addition, the cumulative effects of other projects in the area may limit the availability of alternative sites for displaced wildlife.

Cumulative effects of other projects and activities to wildlife and wildlife habitat should be taken into account in project plans. The compounded effects this project will have with relation to the sagebrush die-off should be discussed. Approximately 50% of the sagebrush within the project area has died; remaining stands are typically older, decadent sagebrush with a cheatgrass understory (personal communication, Miles Hanberg, UDWR, January 28, 2004). As cheatgrass is known to increase fire occurrence, the cumulative effects of the EIS should also discuss how fire and the suppression activities will impact the proposed project activities as well as the remaining vegetation.

As with all projects that will create surface disturbance, there is potential for introduction and spread of invasive species. All possible measures should be taken to prevent the introduction or further proliferation of noxious species. Monitoring and control efforts should be implemented following construction. Seed mixes should, to the extent practicable, contain native plants or non-natives that will not naturalize, and plants that can successfully compete with noxious weeds.

Impacts associated with this project may lead to heightened erosion and degradation of fish and wildlife resources. We recommend you discuss the potential for erosion as well as any measures that will be taken to minimize the effects.

All mitigation efforts should be monitored using established thresholds to indicate the need for remedial action. Success criteria should be applied that address sensitive periods, species of concern, and desired vegetation communities.

Section 2.

Federal agencies have specific additional responsibilities under Section 7 of the ESA. To help you fulfill these responsibilities, we are providing an updated list of threatened (T) and endangered (E) species that may occur within the area of influence of your proposed action.

Common Name	Scientific Name	Status
Horseshoe Milkvetch	*Astragalus equisolensis*	C
Uinta Basin Hookless Cactus	*Sclerocactus glaucus*	T
Bonytail[1, 2]	*Gila elegans*	E
Colorado Pikeminnow[1, 2]	*Ptychocheilus lucius*	E
Humpback Chub[1, 2]	*Gila cypha*	E
Razorback Sucker[1, 2]	*Xyrauchen texanus*	E
Bald Eagle[3]	*Haliaeetus leucocephalus*	T
Mexican Spotted Owl	*Strix occidentalis lucida*	T
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	C
Black-footed Ferret[4]	*Mustela nigripes*	E

[1] Critical habitat designated in this county.

[2] Water depletions from *any* portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

[3] Wintering populations (only four known nesting pairs in Utah).

[4] Historical range.

The proposed action should be reviewed and a determination made if the action will affect any listed species or their critical habitat. If it is determined by the Federal agency, with the written concurrence of the Service, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is complete, and no further action is necessary.

Formal consultation (50 CFR 402.14) is required if the Federal agency determines that an action is "likely to adversely affect" a listed species or will result in jeopardy or adverse modification of critical habitat (50 CFR 402.02). Federal agencies should also confer with the Service on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10). A written request for formal consultation or conference should be submitted to the Service with a completed biological assessment and any other relevant information (50 CFR 402.12).

Candidate species have no legal protection under the Endangered Species Act (ESA). Candidate species are those species for which we have on file sufficient information to support issuance of a proposed rule to list under the ESA. Identification of candidate species can assist environmental planning efforts by providing advance notice of potential listings, allowing resource managers to alleviate threats and, thereby, possibly remove the need to list species as endangered or threatened. Even if we subsequently list this candidate species, the early notice provided here

could result in fewer restrictions on activities by prompting candidate conservation measures to alleviate threats to this species.

Only a Federal agency can enter into formal Endangered Species Act (ESA) section 7 consultation with the Service. A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by giving written notice to the Service of such a designation. The ultimate responsibility for compliance with ESA section 7, however, remains with the Federal agency.

Your attention is also directed to section 7(d) of the ESA, as amended, which underscores the requirement that the Federal agency or the applicant shall not make any irreversible or irretrievable commitment of resources during the consultation period which, in effect, would deny the formulation or implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species.

Thank you for your interest in conserving endangered species. If we can be of further assistance, please contact Bekee Megown at 801-975-3330, ext. 146.

cc: BLM State Office – Attn: Ron Bolander
UDWR – SLC and Vernal
Buys & Associates, Inc., Attn: S. Kirby Carroll, Senior Ecologist, 300 E. Mineral Ave., Suite 10, Littleton, CO 80122-2631

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